

A New *Massicus* (Coleoptera, Cerambycidae) from Taiwan

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Abstract A new longicorn beetle belonging to the genus *Massicus* PASCOE, *M. taiwanus* sp. nov., is described from Taiwan. The new species is very similar to *M. trilineatus* (PIC, 1933), but easily distinguished from the latter by the vague brown median stripe on pronotum, the shallow median groove on occiput, the obtuse angle of external corner of elytral apex and the different structure of male genitalia. *Mallambyx fasciatus* MATSUSHITA, 1933 (= *Massicus trilineatus fasciatus*) from Taiwan is considered as a junior synonym of *M. trilineatus*.

Introduction

MATSUSHITA described *Mallambyx fasciatus* MATSUSHITA, 1933 on the basis of three specimens from Horisha, Taiwan. Later GRESSITT and RONDON (1970) downgraded it to a subspecies of *Massicus trilineatus* (PIC, 1933) as *Massicus trilineatus fasciatus*. On the other hand, MAKIHARA and NIISATO (1986) recognized two independent species from Taiwan and determined as *M. trilineatus* and *M. fasciatus*, respectively.

As a result of the examination of type series of *Mallambyx fasciatus* MATSUSHITA, 1933 preserved in the Hokkaido University Museum, Sapporo, we found two different taxa are intermingled there. A pair of type series is provided with the card of “*Mallambyx fasciatus*” by MATSUSHITA’s handwriting and also with the card of “Holotype designated by M. Hayashi” to male specimen, and “Allotype design. by M. Hayashi” to female specimen. The male holotype agreed with the original description of *M. fasciatus*. On the other hand, the allotype female is coincide with the species recorded and illustrated under the name of “*Massicus fasciatus* (MATSUSHITA, 1933)” (MAKIHARA & NIISATO, *op. cit.*). By our close examination based on the rich specimens from continental Asia and Taiwan, it is concluded that the species determined them as *M. fasciatus* by MAKIHARA and NIISATO (1986) should be a new species, and true *M. fasciatus* is a junior synonym of *M. trilineatus*. In this paper, we will newly describe this unnamed taxon in comparison with *M. trilineatus*.

Materials and Methods

The specimens used in this study are preserved in the following institutes and private collections: Forestry and Forest Products Research Institute, Tsukuba, Japan (FFPRI); Hokkaido University Museum, Sapporo, Japan (SEHU); Natural History Museum of Osaka City, Osaka, Japan (OMNH); T. NIISATO private collection, Tokyo, Japan (TN); N. OHBAYASHI private collection, Kanagawa, Japan (NO); S. TSUYUKI private collection, Kanagawa, Japan (ST).

The original spelling of label data indicated by double quotation mark (“ ”) are provided for the type series of *Mallambyx fasciatus*, of which line breaks are indicated by a slash (/).

The observation method of the endophallus basically follows YAMASAKO and OHBAYASHI (2011).

Systematics

Massicus taiwanus sp. nov.

(Figs. 1, 6, 8–12, 18, 20)

Massicus fasciatus: MAKIHARA & NIISATO, 1986: 2, fig. 1B. (nec MATSUSHITA, 1933)

Massicus trilineatus fasciatus: NAKAMURA *et al.*, 1988: 23. (nec MATSUSHITA, 1933)

Massicus sp.: NAKAMURA *et al.*, 2014: 49.

M a l e. Colour blackish brown; eyes and apical parts of mandibles black; antennae blackish brown, gradually reddish from the middle of 3rd segment to apical segments; elytra reddish brown. Body moderately clothed with tawny pubescence; pronotum with dense buff pubescence, provided with a somewhat vague brown stripe along midline which is very sparsely pubescent, and with blackish brown stripe at each side; elytra, antenna and legs thinly with buff pubescence.

Head rather short, slightly narrower than the maximum width of pronotum, finely punctured, provided with a fine groove from the base of frons to the posterior part of occiput, which is deep between antennal cavities, sometimes vestigial behind vertex; gena 2/5 the depth of lower eye-lobe; occiput about half the length of head. Antenna 1.6–1.8 times as long as body; scape subparallel-sided, finely punctured, weakly rugose, 7/10 the length of 4th segment; 3rd slightly more than twice the length of scape; 5th a little shorter than 3rd; 6th as long as 7th; 7–10th decreasing in length towards apical segments; last segment the longest.

Pronotum slightly broader than long, distinctly contracted to apex than to base, weakly obtuse at side of apical 3/5 which is the widest; base arcuately produced near middle; disc matted, provided with rather weak, irregular wavy subtransverse vermiculations. Scutellum subparallel in basal half and obtusely triangular in apical half, finely punctured.

Elytra 3.2–3.3 times as long as the humeral width; sides almost parallel, arcuately narrowed from apical fourth; apex narrowly obliquely truncate, with short dent at inner angle and obtusely angulated at external angle; disc fairly even, smooth, not distinctly punctured.

Ventral surface microsculptured, scattered with shallow punctures near middle of abdominal sternites.

Legs fairly slender and somewhat flattened; hind tarsus thin, with 1st segment barely longer than 2nd and 3rd segments combined, and slightly longer than claw.

Male genitalia. Median lobe flattened and weakly arcuate in profile; dorsal plate moderately narrowed in sinuate line to the rounded apex, exposing basal 2/3 of sides of ventral plate, median struts more than half the length of median lobe. Endophallus as in Fig. 20. Tegmen slender; parameres narrow, dehiscent in apical half of the whole length, with inner margins narrowly emarginate though triangularly narrowed in apical 2/5, with each lobe narrowly pointed though more or less emarginate at external sides, densely provided with short and semilong setae; ring parts elongate, attenuate in sinuate line to base. Eighth tergite almost trapezoidal, with sides narrowed in sinuate line to broadly arcuate apical margin.

Length 34.0–37.5 mm; breadth 8.0 mm.

F e m a l e. Body broader than in male. Antenna slightly longer than body; scape 3/5 the length of 3rd segment and a little shorter than 4th; 5th segment a little shorter than 3rd; 5–10th decreasing in length towards apical segments; last segment almost as long as 3rd. Pronotum not tuberculate at sides as in male, broadest near middle. Elytra 2.4–2.6 times as long as the humeral width.

Length 41.0–42.0 mm; breadth 11.0–12.0 mm.

Type series. Holotype ♂ (SEHU), “Baibara” “Kikuchi” / “Aug. 24 1925”. Paratypes: 1 ♀

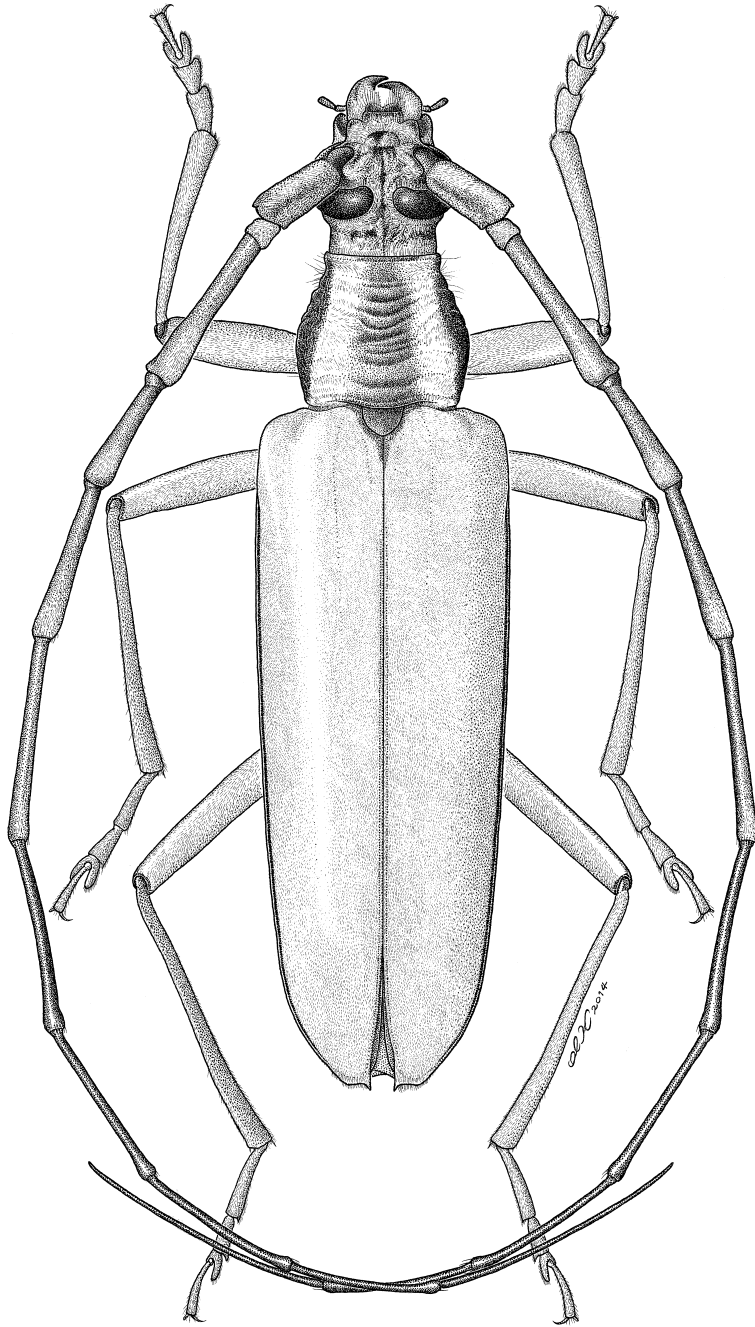
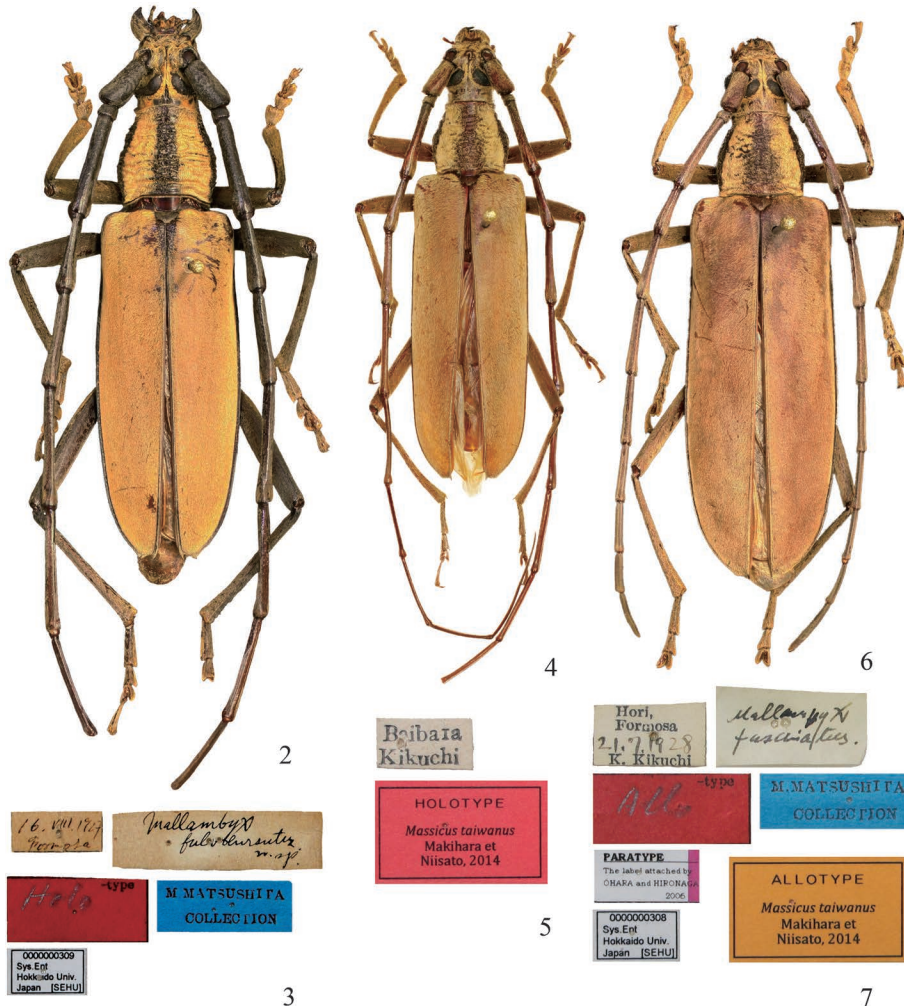
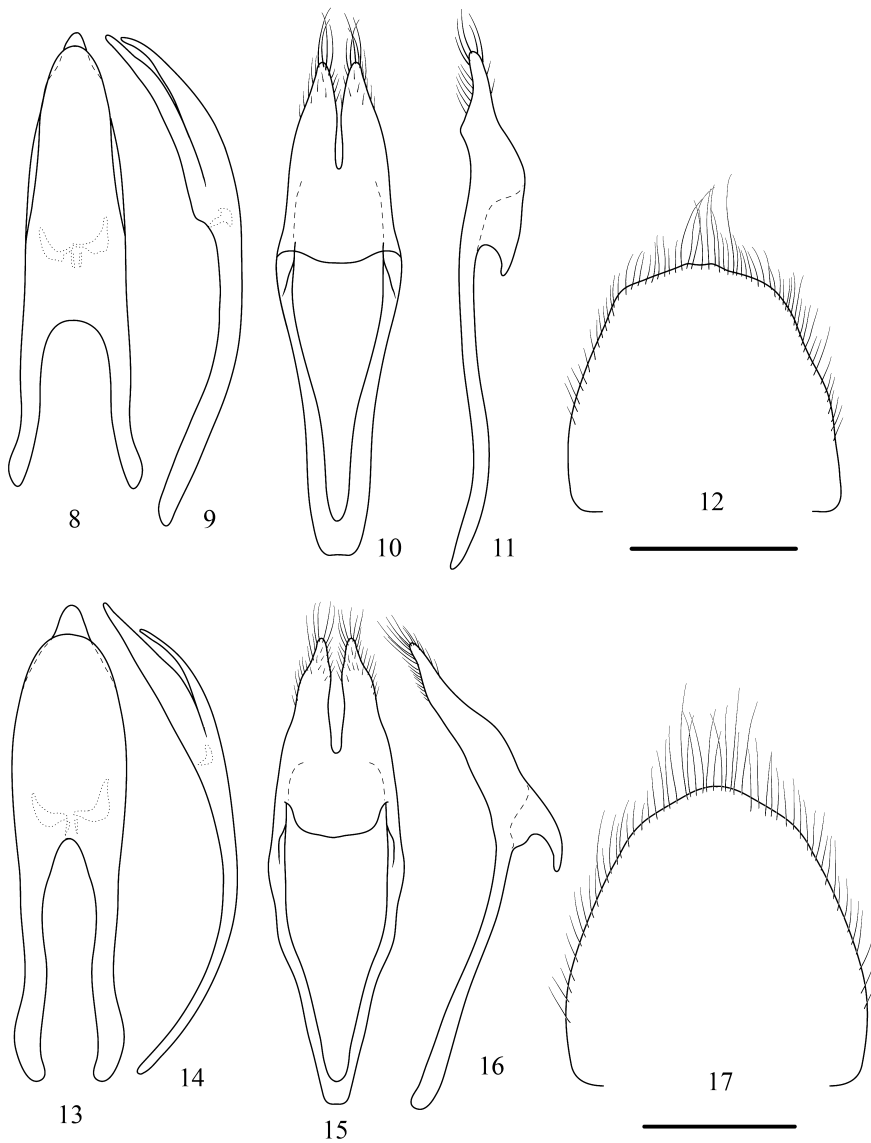


Fig. 1. Habitus of *Massicus taiwanus* sp. nov., holotype ♂ from "Baibara", C. Taiwan. Illustrated by I. KAWASHIMA.



Figs. 2–7. Type specimens with labels of *Massicus* spp. preserved in the Hokkaido University Museum. — 2, 3, *Mallambyx fasciatus* MATSUSHITA, 1933, holotype ♂ from “Formosa”; 4, 5, *M. taiwanus* sp. nov., holotype ♂ from “Baibara”, C. Taiwan; 6, 7, ditto, allotype (paratype) ♀ from “Hori”, C. Taiwan (allotype of *Mallambyx fasciatus* MATSUSHITA, 1933).

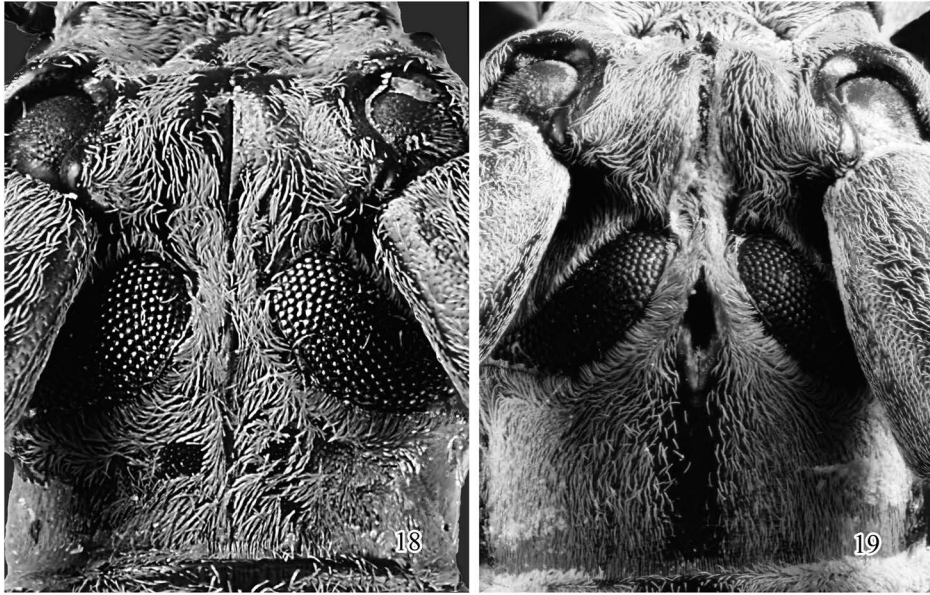
(SEHU) (allotype), “Hori, Formosa” “21.7.1928” “K. Kikuchi” / “*Mallambyx fasciatus*” (handwriting by M. MATSUSHITA) / “Allo-type” “designated by M. Hayashi” (red card, handwriting by M. HAYASHI) / “PARATYPE” “The label attached by ÔHARA and HIRONAGA 2006” (white card with purple stripe) / M. MATSUSHITA COLLECTION” (blue card) / “000000308” “Sys. Ent. Hokkaido Univ. Japan [SEHU]”; 1 ♀ (FFPRI), Lishan, 2,000 m in alt., Heping Township, Taichung City, Taiwan, 21–VII–1968, H. MAKIHARA leg.; 1 ♀ (H. YOKOYAMA Coll. [OMNH07-13]), near Puli, Nantou County, 17–VII–1957, W. CHUNG leg.; 1 ♀ (OMNH), Shihzihou, Ren’ai Township, Nantou County, Taiwan, 2 to 8–V–1991, J.-J. LUO leg.; 1 ♂ (M. HAYASHI Coll. [OMNH98-32]), Benbushi, Ren’ai Township, 21–VI–1990, Z. NOMURA leg.; 1 ♂ (ST), Bilyushi, 2,200 m in alt., Ren’ai Township, 30–VII–1973, Y.



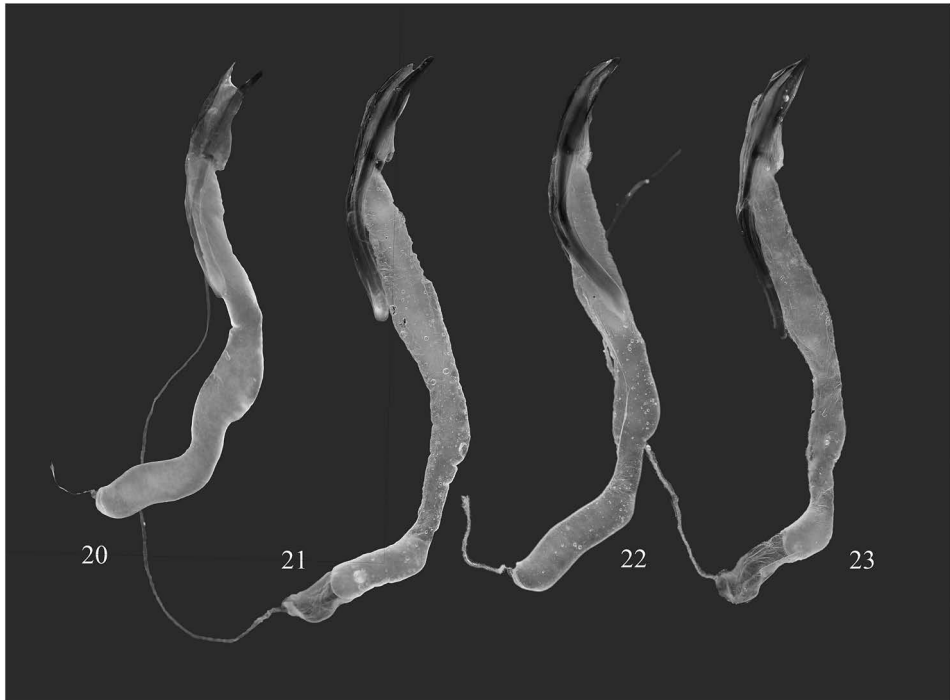
Figs. 8–17. Male genital organs of *Massicus* spp. — 8–12, *M. taiwanus* sp. nov., paratype from Lishan, C. Taiwan; 13–17, *M. trilineatus* (Pic, 1933), from Miaoli, C. Taiwan. — 8, 13, Median lobe, dorsal view; 9, 14, ditto, lateral view; 10, 15, tegmen, dorsal view; 11, 16, ditto, lateral view; 12, 17, 8th tergite. Scale bars 2.0 mm.

MIYAKE leg.; 1 ♀ (ST), Mt. Ali Shan, Alishan Township, Chiayi County, Taiwan, VII–1959; 1 ♀ (TN), Liouguei Township, Kaohsiung City, Taiwan, VI–1978, U. TSEN leg.; 1 ♀ (TN), same locality and collector as the preceding, 24–VI–1978; 1 ♂ (TN), near Taitung City, Taitung County, Taiwan, 1977; 1 ♀ (M. HAYASHI Coll. [OMNH98-32]), Taiwan (no further data); 1 ♂ (H. YOKOYAMA Coll. [OMNH 07-13]), Taiwan (no further data).

Three specimens (one male and two females) of the type series of *Mallambyx fasciatus* (= *Mas-*



Figs. 18–19. Male heads of *Massicus* spp. — 18, *M. taiwanus* sp. nov., holotype from “Baibara”, C. Taiwan; 19, *M. trilineatus* (PIC, 1933) from “Formosa” (Taiwan) (holotype of *Mallambyx fasciatus* MATSUSHITA, 1933).



Figs. 20–23. Endophalli of *Massicus* spp. — 20, *M. taiwanus* sp. nov. from Taiwan (holotype from “Baibara”, C. Taiwan); 21, *M. trilineatus* (PIC, 1933) from Taiwan; 22, ditto from Fujian, China; 23, ditto from Shan State, Myanmar.

sicus trilineatus fasciatus) were designated in the original description by MATSUSHITA (1933). There are four specimens (two males and two females) of *M. trilineatus fasciatus* in the old collection deposited in the Hokkaido University Museum. The holotype male and the allotype female were attached the type labels by M. HAYASHI, since their collecting data are quite accorded with the original description. The other pair of specimens including the holotype of *M. formosana* sp. nov. designated in this paper are not the type series. Refer to the specimens examined of *Massicus trilineatus* at the later page.

Distribution. Taiwan.

Comparative notes. This new species is similar to *Massicus trilineatus* (PIC, 1933), but is easily distinguished from it by the following characteristics.

Massicus taiwanus sp. nov.: Body not so large in an average. Head rather short, provided with a shallow groove or concavity along midline behind vertex. Antenna not so long, less than 1.8 times as long as body in ♂. Pronotum provided with obtuse tubercles near apical 3/5 in ♂, with vague brown stripe along midline, vermiculations on disc more or less weak, basal margin arcuately produced near middle. Elytra almost parallel-sided, with apices obtusely angulate at external corners in both sexes. Median lobe with dorsal plate simply narrowed apicad and widely exposing the sides of ventral plate. Eighth tergite transverse subtrapezoidal in apical half.

Massicus trilineatus: Body large in an average. Head long, provided with deep drop-shaped groove along midline just behind upper eye-lobes. Antenna long, almost always over 1.9 times as long as body in ♂. Pronotum evenly arcuate at sides, without obtuse tubercles even in ♂, provided with clear black stripe along midline, vermiculations on disc markedly strong, basal margin almost transversely truncate near middle. Elytra weakly arcuate at sides, with apices obtusely dent at external corner. Median lobe with dorsal plate broad, completely covered with or slightly exposing the sides of ventral plate. Eighth tergite subovate in apical half.

Notes. According to the type series with the detailed collecting data, this new species occurs in 2,000 m (Lishan) to 2,200 m (Pilu) in altitude in the central mountains of Taiwan. Contrast with its distribution, *M. trilineatus* occurs in 300 to 1,600 m in altitude in nearly entire areas of the mountain zone of Taiwan. The habitat of new species may be in the higher mountainous zone than that of *M. trilineatus*.

Massicus trilineatus (PIC, 1933)

(Figs. 2, 13–17, 19, 21–32)

Dymasius trilineatus PIC, 1933: 12; type area: Tonkin.

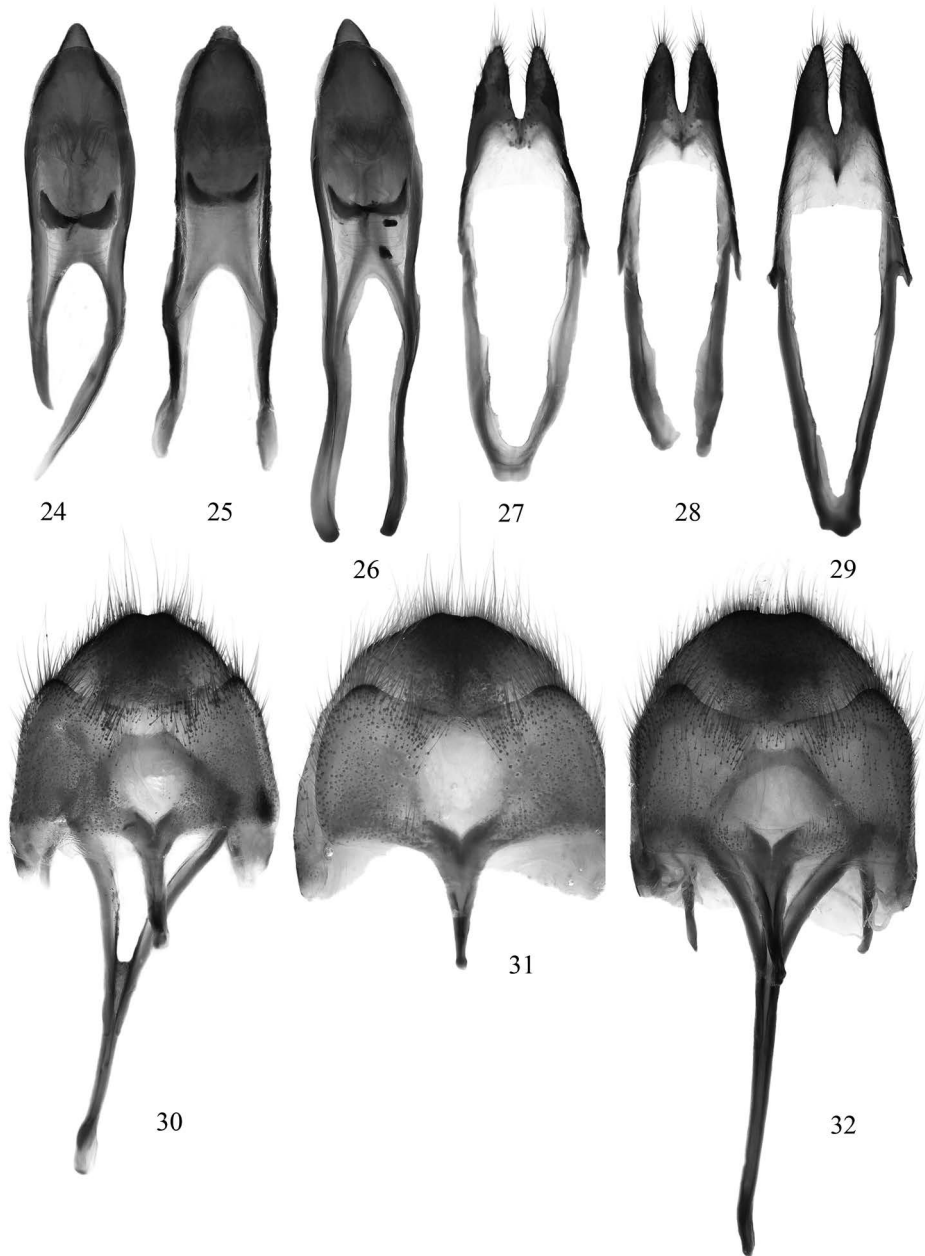
Massicus trilineatus: GRESSITT & RONDON, 1970: 59. — MAKIHARA & NIISATO, 1986: 1, fig. 1A. — NAKAMURA *et al.*, 1988: 23. — YU & NARA, 1988: 20, pl. 6, fig. 8. — HUA *et al.*, 1993: 75, 196, pl. 5, fig. 55. — YU *et al.*, 2002: 87, pl. 8, figs. 6a & 6b. — HUA, 2002: 214. — HUA *et al.*, 2009: 172, 310, pl. 41, fig. 486. — HUBWEBER *et al.*, 2010: 161. — WEIGEL *et al.*, 2013: 73, pl. 6, fig. g.

Mallambyx fasciatus MATSUSHITA, 1933, 243, pl. 2, fig. 1; type locality: Horisha — MITONO, 1941: 82. — GRESSITT, 1951: 135. *Syn. nov.*

Massicus trilineatus fasciatus: GRESSITT & RONDON, 1970: 59. — HUA, 2002: 214. — CHOU, 2004: 134, fig. — NAKAMURA *et al.*, 2014: 49.

Massicus fasciatus: HUA, 1982: 41.

Diagnosis. Colour blackish brown, covered with tawny pubescence, with black three stripes on middle and at sides of pronotum, of which the median one is usually broadened in posterior half. Head rather long, provided with a median groove from the base of frons to the anterior part of occiput which ends a deep drop shaped concavity just behind upper eye-lobes. Antenna long, over 1.9



Figs. 24–32. Male genital organs of *Massicus trilineatus* (PIC, 1933). — 24, 27, 30, Taiwan; 25, 28, 31, Fujian, China; 26, 29, 32, Shan State, Myanmar. — 24–26, Median lobe, dorsal view; 27–29, tegmen, dorsal view; 30–32, 8–9th abdominal segment, ventral view.

times as long as body in ♂. Pronotum moderately in ♂ or slightly arcuate in ♀ at sides, with vermiculations on disc markedly deep, basal margin transversely truncate near middle. Elytra more or less arcuate at sides; apices with external angle briefly dent latero-posteriad, though sometimes almost

rounded, sutural angles toothed in both sexes. Body length: 31.0–52.0 mm in ♂♀.

Male genitalia. Median lobe broad and strongly arcuate in profile; dorsal plate gently narrowed in weak arcuate line to the broadly rounded apical part, completely covered with or slightly exposing the basal sides of ventral plate, median struts 3/5 the length of median lobe. Endophallus as in Figs. 21–23. Tegmen moderate in width; parameres dehiscent in apical 2/3 of the whole length; each lobe narrowly sinuately pointed, densely provided with short and semilong setae; ring parts simply attenuate to base. Eighth tergite elongate semicircular, with apical margin gently arcuate or slightly emarginate near middle.

Specimens examined. [MYANMAR] 1 ♂ (NO), Taunggy, Shan State, 5 to 23–VI–2008, Native collector. [THAILAND] 1 ♂ (M. HAYASHI Coll. [OMNH98-32]), Khao Yai, ca 800 m in alt., Nakhon Nayok Province, 18–VI–1983, H. KUROKO, S. MORIUTI, Y. ARITA & H. YOSHIYASU leg. [LAOS] 1 ♂ (TN), Phou Pan (Mt.), 1,000 to 1,800 m in alt., N20°11'/E104°01, Houaphan Province, NE. Laos, 20–V–2003; 1 ♂ (TN), Phou Samsoum (Mt.), ca. 1,500 to 2,000 m in alt., Xieng Khoiang Province, C. Laos, 2–VI–2007, J. YAMASAKO leg. [VIETNAM] 1 ♀ (TN), Bao Lôc, Lam Dong Province, S. Vietnam, 23 to 25–IV–2000, J. YAMASAKO leg. [CHINA] 1 ♂ (NO), Dujia, Wuyishan, Fujiang, China, 31–V–2002, N. OHBAYASHI & L. Z. LI leg.; 1 ♀ (OMNH), Mt. Dayao Shan, 800 to 1,200 m in alt., 24°07' N/110°01'E, Laoshan (Jinxu Xian), Guangxi Zhuang Zizhiqu, SW. China, VI to VII–1996, Native collector leg. [TAIWAN] 1 ♂ (SEHU) (holotype of *Mallambyx fasciatus* MATSUSHITA, 1933 designated by M. HAYASHI, “16. VIII. 1927” “Formosa” / “*Mallambyx fulvo??suta* n. sp.” (handwriting by M. MATSUSHITA) / “Holo-type” “design by M. Hayashi” (handwriting by M. HAYASHI) / “M. MATSUSHITA COLLECTION” (blue card) / “0000000309” “Sys. Ent. Hokkaido Univ. Japan” “[SEHU]” (white card with purple stripe); 1 ♀ (SEHU), “Bandaisha” (=Wanda), Ren'ai Township, Nantou County, 3–VIII–1941; 1 ♂ (TN), Wulai Township, Taipei City, Taiwan, VII–1978, S. TSUN leg.; 1 ♂ (TN), Mt. Lala Shan, Fuxing Township, Taoyuan County, Taiwan, 22–VI–1985. The other Taiwanese specimens examined are already listed up in MAKIHARA and NIISATO (*op. cit.*).

Distribution. India, Myanmar (new record), Thailand, Laos, Vietnam and China (Fujian, Jiangxi, Hainan, Guangxi, Yunnan and Taiwan).

Discussion

True relationship between *Massicus taiwanus* sp. nov. and *M. trilineatus* may not be so close in spite of their external similarities such as three dark stripes on the pronotum. As mentioned in the comparative notes, there are many differences both in external and genital morphologies between the two taxa according to our careful examination. Especially, the structure of male genital organs are evidently different. For example, the dorsal plate of median lobe of *M. taiwanus* sp. nov. is distinctly narrower than that of *M. trilineatus* and widely exposing the sides of ventral plate. The tegmen and the 8th tergite of *M. taiwanus* sp. nov. are quite different in shape and slenderer than those of *M. trilineatus*. The origin of *M. taiwanus* sp. nov. may not be assumed to the common ancestor of *M. trilineatus*. It has been isolated for a long time and uniquely specialized in the montane zone of Taiwan.

On the other hand, the subspecific affinities between *M. trilineatus fasciatus* from Taiwan and the nominotypical subspecies from the continental area are uncertain. *Mallambyx fasciatus* MATSUSHITA, 1933 was newly combined as well as downgraded as a subspecies of *Massicus trilineatus* (PIC, 1933) without clear basis by GRESSITT and RONDON (1970). Incidentally, *M. trifasciatus* was originally placed under the genus *Dymasius* THOMSON (PIC, 1933). The nominotypical subspecies presently examined shows the polymorphism in the shapes of a median black stripe on the pronotum and elytral apices, and the structure of male genitalia, and its variation completely includes that of *M. trilineatus*

fasciatus. Thus, it may be possible to consider that *M. trilineatus fasciatus* is a junior synonym of the nominotypical subspecies.

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要 約

榎原 寛・新里達也：台湾中部から見つかったミヤマカミキリ属の1新種(鞘翅目カミキリムシ科)。——台湾中部からミヤマカミキリ属の1新種を記載した。本新種は、同じく台湾に分布するヒトスジミヤマカミキリ *Massicus trilineatus fasciatus* (MATSUSHITA, 1933) (= *Mallambyx fasciatus* MATSUSHITA, 1933) に外見が良く似ていて、長らく混同されてきた経緯がある。MAKIHARA and NIISATO (1986) は、ミヤマカミキリ属の近縁な2種が台湾に分布することを明らかにし、前胸背板に明瞭な黒縦条をもつ種に *M. trilineatus*、前胸背板に不明瞭な茶縦条をもつ種に *M. fasciatus* の名称をそれぞれ暫定的にあてて区別したが、この扱いは誤りであった。

このたび北海道大学総合博物館に所蔵されている松下真幸コレクションを調査した結果、*Mallambyx fasciatus* のタイプシリーズには2種が混在し、ホロタイプ(♂)は私たちが広く認知している *M. trilineatus fasciatus* で、パラタイプ(アロタイプ♀)のほうは未命名のタクソンであることが判明した。本論文では、この未命名の種に *Massicus taiwanus* sp. nov. という新名をつけて記載した。この新種は、前胸背板にある縦条の色調以外にも、後頭部を縦走る浅い中央縦溝、鈍く角張る上翅先端外角、雄交尾器などの特徴から区別は難しくない。外見の類似にもかかわらず、両種の類縁関係はそれほど近いものではないかもしれない。

MATSUSHITA (1933) が台湾から記載した *Mallambyx fasciatus* は、GRESSITT and RONDON (1970) により、とくに理由を明らかにしないままに Tonkin (北ベトナム) から記載された *Massicus trilineatus* (PIC, 1933) の一亜種、*Massicus trilineatus fasciatus* (MATSUSHITA, 1933) として扱われた。今回、インドシナ、中国、台湾など各地の標本を比較検討したところ、名義タイプ亜種の多様な変異のなかに、台湾亜種の変異が完全に包含されることが明らかになったので、この台湾亜種を名義タイプ亜種のシノニムとして扱った。

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Additional Records of Weevils New to the Fauna of Mikura-jima Island, the Izu Islands, Japan (Coleoptera, Curculionoidea)

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In addition to the recent reports on the weevil fauna of Mikura-jima Is., Tokyo (KAMESAWA, 2013; KOJIMA & ZHANG, 2013), following twelve species are added to the fauna based upon a recent short survey and the collection preserved in the Laboratory of Entomology, Tokyo University of Agriculture. Accordingly, a total of 100 species of weevils excluding Scolytidae and Platypodidae are recognized from the island. Following abbreviations were used as collector names: CZ: Chennan ZHANG, HK: Hiroaki KOJIMA and YW: Yasuaki WATANABE.

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Anthribidae

1. *Valenfriesia tomicoides* (SHARP, 1891)
1 ex., Sato, 11–V–1967, YW.

Apionidae

2. *Sergiola praecaria* (FAUST, 1889)
1 ex., Kurosakitakao, 5–VI–2013, HK.

Curculionidae

3. *Phyllobius intrusus* KÔNO, 1948
2 exs., Tanteironomori, 4–VI–2013, HK; 2 exs., nr. Thermal Power Station, 4–VI–2013, HK; 1 ex., Obannoo, 5–VI–2013, HK.
Weevils were captured in the plantation forests of *Cryptomeria japonica*.
4. *Trachyphloeosoma setosum* WOLLASTON, 1869
1 ex., Nangô, 14–V–2012, S. OBATA & Y. SHIMIZU (by shifting litter).
5. *Anthonomus okumai* MORIMOTO et MIYAKAWA, 1985
31 exs., Mt. Nagatakiyama, 5–VI–2013, HK.
6. *Anthonomus bisignifer* SCHENKLING, 1934
1 ex., Kawada, 13–VI–1959, YW.
SAWADA and WATANABE (1969) recorded *Anthonomus yuasai* KÔNO, 1938 from Mikura-jima Is., however, it was a misidentification of this species.
7. *Lixus maculatus* ROELOFS, 1873
2 exs., Camping Site, Sato, 4–VI–2013, CZ.
SAWADA and WATANABE (1969) recorded *Lixus depressipennis* ROELOFS, 1873 from Mikura-jima Is. Though it is possible to be a misidentification of this species, we will hold the treatment since we could not find the material.
8. *Pentaparopion costatum* MORIMOTO, 1982
6 exs., Camping Site, Sato, 26–X–2012, HK; 1 ex., Inane-jinja, 6–VI–2013, HK (by shifting litter).
9. *Hytanzo uenoi* MORIMOTO, 1962
1 ex., Camping Site, Sato, 26–X–2012, HK (by shifting litter).
10. *Himatium morimotoi* (KONISHI, 1962)
1 ex., Inanegamori, 5–IX–2012, HK; 2 exs., From Kurosaki-Takao (Otome Tôge) to Mt. Oyama, 26–X–2012, HK. New to the Izu Islands.
11. *Himatium reticulatum* (KONISHI, 1962)
1 ex., Kawada, 13–V–1967, K. TAKAHASHI; 12 exs., Near Miyogaike, 16–V–1967, YW. New to the Izu Islands.
12. *Phloeophagosoma curvirostre* WOLLASTON, 1873
1 ex., Sato, 26–X–2012, HK; 1 ex., Obannoo, 5–VI–2013, HK.

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